

WHAT IS CLAIMED IS:

1. A sheet feeding apparatus for containing sheets in an inside thereof, comprising:

a first cover and a second cover provided in an apparatus main body so as to be openable and closable; and

a detecting sensor for detecting an opening or a closing of the first cover;

wherein said detecting sensor does not detect the closing of the first cover when the first cover is closed in a state in which the second cover is opened and detects the closing of the first cover when the first cover is closed in a state in which the second cover is closed.

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2. A sheet feeding apparatus according to claim 1,

wherein the detecting sensor is provided movably, and moves in a non-detection position where the closing of the first cover is not detected, according to an opening of the second cover, and moves to a detection position where the closing of the first cover can be detected, according to the closing of the second cover.

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3. A sheet feeding apparatus according to claim 1, further comprising a moving member which moves

following an opening or closing operation of one of  
the first cover and the second cover and turns ON or  
OFF the detecting sensor to cause the detecting  
sensor to detect the opening or the closing of the  
5 first cover,

wherein the detecting sensor is fixedly  
provided in the apparatus main body, and

the moving member is movable to a first  
position where the detecting sensor detects the  
10 closing of the first cover and a second position  
where the detecting sensor does not detect the  
closing of the first cover, and in the case in which  
the second cover is closed, the moving member moves  
from the first position to the second position  
15 according to the opening of the first cover and moves  
from the second position to the first position  
according to the closing of the first cover.

4. A sheet feeding apparatus according to claim  
20 3, wherein when the second cover is opened after the  
first cover is opened, the moving member moves to a  
third position where the detecting sensor does not  
detect the closing of the first cover from the second  
position, when the second cover is closed, the moving  
25 member moves from the third position to the second  
position and, even if the first cover is closed when  
the moving member is in the third position, the

moving member does not move to the first position.

5. A sheet feeding apparatus according to claim 3, further comprising:

5 sheet supporting means which supports sheets and is capable of being raised and lowered;

a drive motor which generates a drive force for raising the sheet supporting means; and

10 a gear train for transmitting the drive force of the drive motor to the sheet supporting means,

wherein gears of the gear train are disengaged according to a movement of the moving member from the first position to the second position to lower the sheet supporting means.

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6. A sheet feeding apparatus according to claim 4, further comprising:

sheet supporting means which supports sheets and is capable of being raised and lowered;

20 a drive motor which generates a drive force for raising the sheet supporting means; and

a gear train for transmitting the drive force of the drive motor to the sheet supporting means,

25 wherein it is possible to disengage gears of the gear train following the movement of the moving member to lower the sheet supporting means,

when the moving member is in the first position,

the gears of the gear train engage with each other,  
and

when the moving member is in the second  
position and the third position, the gears of the  
5 gear train are disengaged and the sheet supporting  
means falls.

7. A sheet feeding apparatus according to claim  
1, further comprising an indication member which is  
10 provided movably in the first cover and indicates  
that the first cover is closed earlier than the  
second cover,

wherein, when the first cover is closed in a  
state in which the second cover is not closed, the  
15 indication member moves to a position for indicating  
that the first cover is closed earlier than the  
second cover.

8. A sheet feeding apparatus according to claim  
20 1, further comprising:

sheet supporting means which supports sheets  
contained in the inside of the apparatus main body;

sheet feeding means which feeds the sheets  
supported by the sheet supporting means; and

25 elevating means which raises and lowers the  
sheet supporting means,

wherein, when the detecting sensor detects the

closing of the first cover, the sheet supporting means maintains a height for allowing sheet feeding, and

when the detecting sensor detects that the  
5 first cover is opened, the sheet supporting means is lowered to a lowermost part.

9. A sheet feeding apparatus according to claim 1, further comprising regulating means which is  
10 capable of regulating an opening operation of the second cover in a state in which the second cover is closed,

wherein the regulating means operates in association with the opening or the closing operation  
15 of the first cover,

in a state in which the first cover is closed, the regulating member regulates the opening operation of the second cover, and

in a state in which the first cover is opened,  
20 the regulating means does not regulate the opening or the closing operation of the second cover.

10. A sheet feeding apparatus according to claim 1, further comprising:

25 sheet supporting means which supports sheets and is capable of being raised and lowered;

a drive motor which generates a drive force for

raising the sheet supporting means; and

a gear train for transmitting the drive force  
of the drive motor to the sheet supporting means,

wherein the sheet supporting means falls due to  
5 its own weight as gears of the gear train are  
disengaged according to an opening operation of the  
first cover, and

even if the first cover is closed in a state in  
which the second cover is opened, a state in which  
10 the gears of the gear train are disengaged by the  
opening operation is maintained.

11. A sheet feeding apparatus for containing  
sheets in the inside thereof, comprising:

15 a first cover and a second cover which are  
provided in an apparatus main body so as to be  
openable and closable;

a holding member which is pivotable with  
respect to the apparatus main body and is moved by an  
20 opening of a closing operation of the second cover;  
and

a detecting sensor which is held by the holding  
member,

wherein, when the second cover is closed, the  
25 holding member is moved to a position where the  
closing of the first cover can be detected by the  
detecting sensor, and

when the second cover is opened, the holding member is moved to a position where the closing of the first cover is not detected by the detecting sensor.

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12. A sheet feeding apparatus for containing sheets in the inside thereof, comprising:

a first cover and a second cover which are which are provided in an apparatus main body so as to  
10 be openable and closable;

a moving member which moves following an opening or a closing operation of one of the first cover and the second cover; and

a detecting sensor which is provided in the  
15 apparatus main body and turned ON or OFF by the moving member,

wherein, when the second cover is closed, the moving member is moved to a position where the closing of the first cover can be detected by the  
20 detecting sensor, and

when the second cover is opened, the moving member is moved to a position where the closing of the first cover is not detected by the detecting sensor.

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13. A sheet feeding apparatus according to claim 12, further comprising:

sheet supporting means which supports sheets  
and is capable of being raised and lowered;

a drive motor which generates a drive force for  
raising the sheet supporting means; and

5 a gear train for transmitting the drive force  
of the drive motor to the sheet supporting means,

wherein it is possible to disengage gears of  
the gear train following movement of the moving  
member to lower the sheet supporting means,

10 the moving member is movable to a first  
position where the detecting sensor detects the  
closing of the first cover and a second position  
where the detecting sensor does not detect the  
closing of the first cover and, in a state in which  
15 the second cover is closed, the moving member moves  
from the first position to the second position  
following the opening of the first cover and moves  
from the second position to the first position  
following the closing of the first cover,

20 when the second cover is opened after the first  
cover is opened, the moving member moves to a third  
position where the detecting sensor does not detect  
the closing of the first cover from the second  
position, when the second cover is closed, the moving  
25 member moves from the third position to the second  
position and, even if the first cover is closed when  
the moving member is in the third position, the



moving member does not move to the first position,  
when the moving member is in the first position,  
the gears of the gear train engage with each other,  
and

5           when the moving member is in the second  
position and the third position, the gears of the  
gear train are disengaged and the sheet supporting  
means falls.

10           14. An image forming apparatus comprising:  
a sheet feeding apparatus for containing sheets  
in the inside thereof;

a first cover and a second cover which are  
provided in the sheet feeding apparatus so as to be  
15   openable and closable;

a detecting sensor for detecting the opening  
and closing of the first cover; and

image forming means for forming an image on a  
sheet fed from the sheet feeding apparatus,

20           wherein the detecting sensor does not detect  
the closing of the first cover when the first cover  
is closed in a state in which the second cover is  
opened and detects the closing of the first cover  
when the first cover is closed in a state in which  
25   the second cover is closed.